



PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Yoshiki ONO

et al.

Serial No.: 10/821,170

Art Unit: 1742

Filed: April 9, 2004

Docket: 108421-00096

For: Co-Cr-Mo Alloy Fine Wire,
Manufacturing Method Therefore,
And Planar Body, Tubular Body,
Stranded Wire And Cable Formed Of
Wire

Dated: May 17, 2007

Assistant Commissioner for Patents
Washington, DC 20231

DECLARATION OF Yoshiki ONO
UNDER 37 C.F.R. §1.132

Sir:

I, Yoshiki ONO hereby declares and says that:

(1) I am one of named inventors of the above-identified
patent application, U.S. application Serial No. 10/821,170;

(2) I have complete knowledge of the subject matter
disclosed in U.S. application Serial No. 10/821,170, filed on April
9, 2004 and have reviewed the applied references, namely U.S. Patent
No. 5,891,191 and JP'2002-363675A, which were cited in the Office
Action dated December 20, 2006;

(3) To establish that the claimed alloy provides
criticality relative to the alloy disclosed in the above-mentioned
prior art references, the following data was prepared:

Test 1

Using an alloy of composition of Co - 29 weight % Cr - (8-16)

weight % Mo, Sample Nos. 1 to 5 of fine wires having diameters of 150 micrometers, 180 micrometers, 210 micrometers, 220 micrometers, and 250 micrometers were obtained by the method of melt spinning in gas. The concentration ratios to the Mo concentration and degrees of bending deformation of Sample Nos. 1 to 5 were measured. The result is shown in Table 1.

Table 1

Sample No	Diameter (μm)	Mo concentration ratio	Bending Degree
1	150	1.52	132
2	180	1.73	124
3	210	1.84	83
4	220	2.03	79
5	250	2.25	74

Evaluation

As shown in Table 1, when the Mo concentration ratio was 1.8 or less, the degree of bending deformation was greatly large.

Test 2

Using an alloy of composition of Co - 29 weight % Cr - (8-16) weight % Mo, Sample Nos. 6 to 11 of fine wires having diameters of 150 micrometers, 180 micrometers, 210 micrometers, 220 micrometers, and 250 micrometers were obtained by the method of melt spinning in gas. X-ray (Co-K α) diffraction measurement was

performed to the internal structure of Sample Nos. 6 to 11, and existence of unknown phases other than gamma phase (Co base solid solution of face-centered cubic system) and epsilon phase (Co base solid solution of hexagonal close-packed system) was checked. Degrees of bending deformation of Sample Nos. 6 to 11 were measured. The result is shown in Table 2.

Table 2

Sample No	Diameter (μm)	Unknown phase	Bending Degree
6	150	None	120
7	180	None	118
8	180	None	105
9	210	Exist	71
10	220	Exist	82
11	250	Exist	76

Evaluation

As shown in Table 2, when the internal structure of the fine wire was composed of only gamma phase and epsilon phase, the degree of bending deformation was greatly large.

(4) All statements made herein, of his own knowledge, are true, and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made may be punishable by fine or imprisonment or both, under Section 1001 Title 18 of the U.S. code and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Dated: May 17, 2007


Yoshiki ONO

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